1: Gillin E-5 (1932-33) 1936 SR9 Carib SR9

something to bring back. No man will return from a hunting excursion empty handed to face the ridicule and anger of his wife; and as a consequence men are occasionally absent from their homes for two or three days, sleeping in the bush, until they have acquired some game, if nothing more than a turtle or a couple of birds' eggs, to bring back to the household. Under ordinary circumstances a man usually hunts alone with the help of a dog, although hunting parties are occasionally formed for the pursuit of drove animals, such as bush hog, or unwieldy beasts such as maipuri (bush cow). In fishing a man has his own private lines which he tends himself, but when a stream is poisoned, the cooperation of several men, and frequently of women and children, is enlisted.

The women of the household attend to the field products, digging the cassava and gathering the other edibles, as well as the cooking and preparation of all food. In these activities they are assisted by men too old to hunt and by young children. The cutting and preparation of the field, is, however, the man's task. And both the men and the women cooperate to do the planting.

Hunting. In the procuring of land animals, only three kinds of devices are used: the bow-and-arrow, the trap, and, rarely, the shot gun. Blow guns and spears are not in use at the present time, nor is there any memory of their former use by the Caribs. Such contrivances are said by the old men to have been used by the Akawai who formerly had settlements on the river and they are occasionally brought into the area as curiosities from distant Akawai settlements.[1]

Bows are made from four different kinds of wood and vary slightly according to the material. These four varieties are washiba (Carib, same; unidentified), letter wood (Carib, paidya; *Brosium aubletti*), bopa (Carib, same; unidentified), and yarriyarri (Carib, same, *Anaxagorea* sp.). The washiba bow in cross section is a flat oval; it is somewhat flatter on the belly than on the back and the wood is almost black. The letter wood bow has the same general

[1] Alec, for instance, says that when he was young his uncle brought a blow pipe home after he had made a trip to the head of the Cuyuni. There he had bought the weapon from the Akawais. It was made in one piece from a palm stem with the pith removed. His uncle gave him instructions concerning it. If you hit the quarry and it runs away, the poison is spoilt and the blow pipe must be thrown away. "This is because the game runs away with the essence of the poison" robbing the poison on your unused darts of its power and the weapon of its efficacy. To be successful you must try to hit the game two or three times and cut out the parts around the wounds.

bitter cassava, and baked into small balls which are dropped into the water where they are swallowed by the fish. A fish which has been gullible enough to swallow this fraud soon loses control and floats to the surface where it is captured by the fisherman.

I did not observe nor hear of the use of fish traps or of nets, although these appliances are reported from other parts of the colony.

The fish most commonly used for food are the haimara (*Hoplias macrophthalmus*), huri (*Hoplias malabaricus*), yarrau (*Hypostoma* sp.), low-low (*Silurus* sp.), pirai (*Pygocentrus*), cartabak (?*Tetragonopterus*). The moracot, so well known for its fighting tendencies and flavor in other parts of the colony, is found only in the tidewater portions of the Barama. Hook baits include spiders, calabash pap, cassava bread, and various worms.

Among other food products obtained from the streams are sting-ray (caught on hooks and tasting somewhat like tripe when cooked), small periwinkles or "snails" of two sizes called respectively mari (small) and kue (large), frog eggs.

Vegetable Foods. Every household has its own agricultural field lying at some distance from the house clearing. The slash-and-burn method is used in agriculture, a method which, in the absence of artificial fertilizers, requires the opening up of a new field usually every third year due to the exhaustion of the soil.

I do not intend here to enter into a detailed description of agricultural practices, inasmuch as similar procedures to those followed by the Caribs have been described by Roth, Schomburgk, Farabee, and others. When choosing a spot for a field, the first criterion is good drainage, and for this reason the fields are frequently referred to as "cassava hills." Associated with the topographical position in the problem of drainage is the character of the soil. The proper soil is called "white dirt" and takes its color from the large amount of sand mixed with the loam. First the underbush is cleared away with cutlasses and heaped into piles. Then the trees are cut down with iron axes obtained in trade. For felling large trees with heavily buttressed feet, scaffolds of small logs tied together with bush rope are built ten to fifteen feet above the ground, on which men may stand to do the chopping.

The tree felling is usually done during the rainy season and the movable logs and brush piled into heaps. Some time after the advent of the dry season, the logs and brush are burned, after

1: Gillin E-5 (1932-33) 1936 SR9 Carib SR9

which the crops are planted in the ashes among the stumps and charred logs (Plate 5, *b*). The field is usually ready to burn about three weeks after the start of the dry season and is allowed to burn for about a week In the planting women assist the men. Two implements are use l, the hoe (sambá) of iron, which is obtained in trade, and the digging stick, which is merely a long pole three to four inches in diameter and five to eight feet long with a sharpened end. The latter implement is held in both hands and driven repeatedly into the ground to make a hole in which to plant such things as plantain. The hoe is used for loosening the ground preparatory to planting cassava shoots, maize, and similar crops. Cassava of the "bitter" or "poisonous" variety (*Manihot utilissima*) is the staple vegetable product of the Caribs. It is propagated by inserting young sticks cut from mature cassava plants into the ground at an angle. Each stick must have several shoots or buds and must show milk when it is cut. Cassava growing in the field is known as mainyá; the root of the cassava is called kiédi; and baked cassava bread ready to eat is arépa. After planting, the young cassava is weeded for a few weeks, following which it requires no further care until the roots are ready to be dug, which usually is the case after about nine months. The weeding is done by women and children. Cassava is a perennial which will produce a second crop without further attention. The third crop is usually poor because of exhaustion of the soil.

The roots are pulled up or are dug with hoes by the women, who usually go to the field every two or three days to replenish their supplies. They are placed in walishas (a type of carrying basket) and brought back to the house, where they are first washed free of earth with water brought from the creek in a calabash or pot. Then they are peeled or scraped to remove the bark-like skin (Plate 6, *a*). This process is called ipityali (I scrape cassava). The white peeled roots are then washed again (Plate 7, *a*) and grated (Plate 6, *b*). The graters now used are made of tin perforated with a pattern of concentric circles of small holes punched with a nail (Plate 7, *b*). The obverse surface of the perforated tin is rough and is bent over a log into a convex shape much like a larger edition of the tin nutmeg grater which is used in American kitchens. The graters average about eighteen by eight inches, and when in use are fitted onto the convex surface of a

1: Gillin E-5 (1932-33)1936 SR9 Carib SR9

776 piaiyen usually has contact with one or more tiger spirits, who may
791 be used by him to discipline the less ferocious spirits of his circle. The tiger spirits are believed to be the ghosts of dead tigers. All other animals also have spirits, which become ghosts upon their
[824] death. Boba root is used by the hunter as a protection against the spirit of any animal he may have killed. For instance, if he has
[789] killed a tiger or any other animal which has a dangerous spirit, he scrapes the roots of the boba tree and makes a salve which he puts on his skin. Then he crawls under the buttressed roots of any large tree. The boba salve is believed to entangle the spirit of the dead animal so that it can do no harm to the hunter. In crawling under the roots, the hunter scrapes the spirit off himself. Animals
[825] are also amenable to the machinations of spirits of beings and orders in addition to the tiger spirit. Thus, a dog that barks in its sleep is believed to be suffering from the interference of spirits. However, the only way in which a member of one of the five major classes of nature spirits can be killed (i.e. removed from interference in worldly affairs) is by being devoured by a tiger spirit.

776 Each cassava field is watched over by a spirit of the cassava
241 called Piuku. The precise connection between this being and the Ume, or hill spirits, is not clear. It is believed that each hill in the bush is under the care of a group of Ume, who after the field is cut and cultivated, apparently abdicate in favor of the Piuku. The Ume live in a settlement of their own under the hill, which serves as a roof. The Piuku is not a member of the Ume order, but nevertheless it is not unfriendly toward the Ume. An abandoned field reverts to the Ume spirits, and in the rare cases of fields without cassava no Piuku is present. It is not believed, on the other hand, that each separate cassava plant has a spirit of its own, nor are the other plants of the field associated with spirits. Piuku is thus a sort of agricultural deity especially associated with cassava plants. Concerning the manifestations of the Piuku to human beings, an informant said, "Once my wife and I were digging cassava in a field. Nearby I hear a groaning m'm'm'm. I do not know what it is so I go to the piaiyen and he says it is the Piuku." Another informant said, "The piaiyen told me the Piuku is like a big white man big head, broad shoulders. Has a white skin covered with shiny buttons, but wears no clothes," a belief which is obviously acculturated.

1: Gillin E-5 (1932-33) 1936

411

a. A man using bow and arrow. Note the typically raised position of the right elbow.

241

b. A newly cut cassava field. The brush has been removed, but the fallen tree trunks have not yet been burned.

[end plate 5]

121 informants or locations, another dimension is added here. Individ-
114 uals can be identified and the establishment of trans-generational
124 continuity is possible.

121 Two areas of theoretical concern particularly lend themselves to
*177 investigation under the fortuitous circumstances of being able to
[161] trace changes occurring over time among a specific group. The first
is cultural change: the second, human population control mechanisms.

175 In regard to cultural change, until forty years ago the Caribs
*177 of the Upper Barama River were adapting to the equatorial rain
182 forest with essentially a lithic technology. They combined hunting,
[22] fishing, and collecting with a semi-nomadic form of horticulture.
[241] Currently, the majority of these Caribs are settled at a community
*177 known as Baramita Air Strip. They engage in wage employment, make
[465] use of regional markets for local products, participate in agricul-
[438] tural development programs, and benefit from national medical
[242] programs. From a position of relative isolation in the rain forest,
[657] this group has been increasingly encapsulated in the national
[161] political economy. Attending this development has been changes in
their population size and composition as well as internal organiza-
tion. These changes are a major focus of the present study.

121 In pursuing the analysis of these changes, cultural materialism
is relied upon as the most economical mode of explanation. Among
others, Harris (1968) has proposed that techno-environmental
determinants can serve in a comparative approach to cultural
adaptation. One example of this approach is Murphy and Steward's
comparison of the Mundurucu of Brazil and the Northeastern

133 into the Barama at about 450-500 feet above sea-level and has a diminishing gradient of a little over two feet a mile to the top of the Great Falls which drop eighty to eighty-five feet in a distance of about half a mile (Bishop 1941:7). The plain is interrupted by the outcropping of the gneiss-granite bedrock to form the Frasier Falls. About thirty-five miles above Towakaima, the Frasier series of rapids are about two miles long and present a very small total drop (Bishop 1941:4). The Upper Barama River is fed predominantly by tributaries on its right (south) bank. These tributaries follow the grain of the gneiss-granite bedrock and are mainly blackwater creeks which have a low potential for human exploitation. Such creeks are dark brown in color due to oxygen deprivation caused by decaying vegetable matter which also releases carbonic and humic acids (Meggers 1971:12).

13 Thus, there are three local micro-environments which yield biotic
182 resources for human use. These are the river system, the naturally
241 occurring rain forest, and the man-made fields of cultigens. From these, floral and faunal resources are exploited.

Floral Resources

824 Local vegetable foods are those that occur in the forest and those
241 that are cultivated. However, there is no clear line dividing the two. The slash-and-burn horticulture by which vegetable foods are obtained is a modification of the rain forest. The cultigens are integrated into the forest in a way that they temporarily replace its floral community (Geertz 1963:15-28; Meggers 1971:19-21). From the

824 direct plant-to-plant cycling characteristic of the rain forest
241 floral community, energy is diverted for human consumption. The diverse floral species are replaced with species selected to yield food sources. Fields are prepared and maintained in keeping with this use.

242 The soil is selected with regard to its role as a support for the
241 plants. A preferred site is a hillside. The gradient allows for drainage. Also, a mixture of sand and clay will deter the water retention which would rot root crops in predominantly clayey soil. The clay component of this mixed soil protects the seeds and young plants from the full impact of heat from direct sunlight. Only a small field, about one acre, is usually cut at one time. Field shapes tend to be circular. Tall trees are left on the periphery to allow partial shade on the seeds and young plants.

241 The cutting is done to allow burning just before the rainy
[221] seasons that occur from November to January and from May to July.
[132] Planting follows burning. Previously, fire and stone-edged imple-
241 ments alone were used. However, iron-edged tools are now common in
412 the Upper Barama area. Digging sticks for planting seeds remain in
[372] use.
*[122]

241 The different cultigens are intermingled, making use of micro-environmental conditions. For example, sugar cane plants may be located to take advantage of a few square feet along a creek bed. Pineapples may be placed in an ash line. Young tobacco plants may be located to be partially shaded by a stump until mature enough to tolerate the sun.

241 To stagger the harvest, planting occurs over a period of time. However, once planted a field is rarely tended. Trips are made only to harvest foods as they are needed. As grasses choke the cultigens, a new field is cut. This happens about every two or three years.

241 137 *177 Over time, new additions have been made to this intermixture of species in the fields. These have come from several sources. Table 1 includes a list of the plants Gillin found growing in fields and by house sites in 1932-33. Of these, banana, plantain, yam, eddo, sugar cane, and citrus fruits were introduced to the New World by Europeans (Gillin 1948:825). Obviously, the Barama River Caribs do not recognize these origins. In 1970-71, there were many additions to Gillin's list. The ones which have been introduced from Georgetown are recorded separately in Table 1.

241 824 Also, in 1970-71, naturally occurring forest species were found in the cultivated fields. As the cultigen community is a duplication of the forest flora community, this reflects simply a change of location convenient to the human consumer. Thus, the boundary is merged between the cultigen community and the naturally occurring floral community. All local vegetable food sources are available from energy captured from the cycling of energy within the rain forest flora community, or a duplication of it.

241 *177 654 This integration of food production within the extant biotic community has only recently been altered. Fields convenient to locations of outside resources have been weeded and replanted for up to ten years. The new agricultural methods introduced by the government emphasize the single cash crop grown on a larger, exposed

[TEXT CONTINUED ON PAGE 13]

2: Adams E-4,5 (1970-1971) 1973 SR9 Carib SR9
(1932-1971) Barama River

TABLE 1

CULTIGENS

• 241
137
*177

1932-33

manioc (Manihot utilissima)
plantains of two varieties
bananas of ten varieties
pineapple
three types of yams
tanya
eddo
sugar cane
two types of squash
red and white maize
lime
papaya
kraua grass
five varieties of pepper
four types of calabash bushes
cotton tree (Gillin 1936:14-21).

1970-71 Additions

sweet manioc
watermelon
coconut
coffee
pumpkin
potato
sweet potato
rice
dashin
okra
sapodillo
calalu
tomato
koraila
medi
pigeon pea
peanut
black-eyed pea
red beans
guava
sour sop
breadnut
grapefruit
orange
mango
tangerine
onion
bora bean
gourd
pokchoy
mustard
thyme
lemon grass
sugar apple
cashew
avocado

field. Individuals have cut extensive fields to support their competition for the office of Amerindian captain. The impact of these recent departures marked by the increased escape of energy from the local forest ecosystem as well as the deterioration of the exposed soil through laterialization at some point will impose limiting factors on the agricultural development of the area.

The forest flora which is gathered for food and other uses is to some extent defined by individual knowledge. The identification as well as the preparation are knowledge held by a limited number of people. For some fruits, nuts, and roots no commonly known name exists in the Carib language. This follows from the nature of the food quest. An individual is constantly searching out these vegetable foods during the course of his daily activities. Consequently, the list of forest flora foods must remain partial. Those recorded by Gillin and additions made by 1970-71 field work are presented in Table 2.

Faunal Resources

The faunal resources from the forest are recorded in Table 3. Those reported by Gillin are presented first, then the current additions. As the 1970-71 list was collected in the air strip vicinity, the additions reflect a more careful scouring of the available foods as a result of a heavier concentration of population in one location. On an individual basis, taboos against eating monkey and tiger (Gillin 1936:10) have been abandoned. Also, this list cannot encompass the many sporadic and minute sources. A person

[TEXT CONTINUED ON PAGE 16]

*177 a population of 114 and Baramita sixty-nine. These two settlements
361 also have mobile residents who have access to farms in still more
162 remote areas. The latter include thirty-five inhabitants.[10] In
[161] total, there were 551 Carib people in the Upper Barama River area in 1971.

*177 Increasingly, the practice of abandoning a house site in the case
768 of a death is being neglected. A cemetery some distance away is
[764] being used at the Air Strip. Several older graves around house sites are disregarded. Apparently, priorities of location override this tradition.

*177 Figure 11 shows the current settlement pattern. Both zone a and
361 b have permanent residents. Zone c residents also make use of farms in either zone a or b. There is little direct movement between zone a and b. The partial centralization of population initiated by the local mining economy has been completed. Within the existing nucleation, the center has been changed from the mine to the air strip. The remaining population has been drawn into this locus. In contrast to the limited opportunities available at the mine, some of the
[657] opportunities at the Air Strip are public. That is, they are avail-
[464] able to all Caribs. These new resources are the clinic, the school, and agricultural assistance. However, very few employment opportuni-
[241] ties are available at Baramita Air Strip. Bush farms must be maintained and returned to in the case of the permanent workers who had left aside subsistence in the rain forest.

Consequently, a pattern of dual residence appears to be emerging in response to resource development. The local Carib population has

[TEXT CONTINUED ON PAGE 52]

centralized to make use of the government programs and services available at the Air Strip as well as maintain an advantageous subsistence relationship to the rain forest. From the preliminary data available on the resettlement around Baramita Air Strip, a dual pattern of residence is evident only in respect to those people who have moved in from the more remote settlements. To some extent, this pattern reflects the several months required to develop a productive farm in a new location while relying on an established farm. As yet, permanent residents of the Air Strip and the two satellite settlements of Aranka and Baramita have not cut fields in the more remote areas. The further development of a pattern of dual residence will depend on persistence in the extent and nature of regional networks of exchange at Baramita Air Strip.

At the present time, the aggregation of people at the Air Strip plus those in the satellite settlements have put a burden on the local resources in the immediate area. With regard to hunting and gathering, greater effort is given for meager results around the Air Strip so that longer trips must be made. Also, the higher, dry land suitable for an air strip does not provide a reliable water source during the dry seasons. People must dig in the dry stream beds and at times have temporarily moved and camped out on the banks of the Barama River until rain came again. House structures continue to be located inside cultivated fields, and large tracts of land have been opened up around the air strip.

A survey completed in late spring 1971 revealed that 140 acres of bush had been cut for farms around the air strip. To avoid disputes,

241 311 *177 agreements are made concerning the direction particular men will move in cutting down bush for new fields. Land which would traditionally be regarded as unsuitable for farming is being used. Increasing land areas are being exposed and, thus, the potential for extensive land deterioration exists. The ultimate impact of these activities by 551 people within fifty square miles of bush cannot be completely related in that the data available disclose the effect of only the first year of this more centralized settlement pattern.

361 *177 In conclusion, among the Upper Barama River Carib population, the capacity for transience has been differently adapted to the succession of resource situations. The first settlement pattern was an adaptation in a position of relative isolation in the rain forest. In response to the dispersed nature of local subsistence resources, the Carib population was dispersed in settlements along the river system. These settlements fluctuated in population size, and there is evidence [628] to suggest that personnel exchanges were more frequent within two groups of people, one located in the upper section and the other in the lower section of the Upper Barama River corridor. In any event, this was changed with regional contacts and exchange opportunities. A nucleation of the local population has emerged in response to the introduction of centers of external resources, the mine and the air strip. [464] At the mine, employment was available to only a portion of the Carib population. The remainder of the population maintained a subsistence in the bush, although incorporating occasional market opportunities at the mine. The mobility of the unemployed population in the satellite settlements of Aranka and Baramita, and perhaps the

*177 175 464 laborers from the coast. A 1953 list of Baird's workers at Millionaire includes a mechanic, engineer, manager, foreman, and twenty-six laborers from the coast. Coastal workers still predominanted a year later when they held a strike for higher wages. They were granted their request. A few years later, other coastal workers held a second strike. By this time, a number of Carib men were in steady employment. With this reserve of local laborers, the coastal men were sent away. Manganese operations were opening up at Matthev's Ridge and these coastal men went there.

This reliance on Carib manpower was accomplished gradually. Many Carib men were anxious about working in the mine shaft. However, in time, Caribs gained confidence and skills and eventually totally replaced miners from the coast. Permanent employment was available for a core of workers. Jobs were available to others with changes in production or with the undertaking of special projects such as the road built between the air strip and In Time in 1964. At the height of his activities in the middle 1960's, Baird employed about fifty Carib men. At the time, this was a little less than fifty percent of the adult male Carib population. Later, Baird cut to thirty-two workers before finally phasing out his mining enterprise. In contrast to previous employment opportunities which briefly separated a man from his subsistence schedule, these mining opportunities with Baird resulted in a very different routine among the Carib men.

[241] [466] Specifically, Amerindians at the mine eventually left aside subsistence farming. Baird imposed a work schedule on a weekly calendar. The more permanent day work was from 6:30 to 11:00 in the morning and

*177 175 466 [484] Baird further sought to secure Carib clients with special benefits. He tended to the emergencies of his workers and their families day and night. From time to time, Baird made trips to Georgetown possible by allowing workers to ride one way free on the charter flights which [891] left the air pool and later the air strip empty. In 1966, he started the first school. It was built at In Time and staffed by a teacher Baird privately paid.

*177 175 443 43 [434] Baird's trade store was operated primarily as a service for the workers. Local provisions were bought and sold at the same price. This policy was used also with many foods flown in from Georgetown. The thirty-two or more workers who earned about $4 a day had an income of approximately $1200 a year. As these workers had only small gardens and their wives and other members of their households enjoyed a great deal of leisure, most provisions were purchased. Cassava bread, the staple, sold for 16¢ a disk which is about a half inch thick and two feet in diameter. Local fish and meat sold for about 40¢ a pound. Rice, sugar, salt fish, canned milk, tinned sardines, and other foods were available. The store stocked a variety of implements for hunting, fishing, farming, and doing household chores. It also stocked cigarettes, matches, soap, cloth lengths, and manufactured clothes. Baird [452] extended each worker up to $100 credit and arranged special purchases. These included guns[2] and radios. One Carib man bought a portable, [454] manually operated Singer sewing machine in this manner. As there was no opportunity for investment, a worker would hide away somewhere about his house any cash he did not immediately use to make purchases.

[241] [461]

returned to rain forest subsistence. There was no household without a large farm, but it was some time before new farms became productive. In addition, all of the Carib men were anxious to gain some money income to buy commercial items they had come to consider a need. However, there were few employment opportunities and the demand for local products was very limited. Although maintaining a subsistence relationship to the rain forest, the population nucleated around the air strip as much as possible to make use of the few remaining resource opportunities, including health care, food programs at the school, and whatever was available by way of casual wage work.

More men sought work than that available. Government station hands were hired. Work involved carpentry, cutting grass, filling water tanks during the dry seasons and other tasks. For a time, four men had these jobs. By spring 1971, only one man was left in this employment. Also, occasionally men were hired on project work, including stumping out areas, lopping down secondary bush at the extreme ends of the air strip, and building a clinic under one of the government residence houses. The pay for this work was about $4 a day, and the work schedule was from 6:30 A.M. to 2:30 P.M., allowing the men time to farm or hunt during daylight hours.

Baird's private activities also entailed some employment opportunities. He was considering a partnership which would take him to the Potaro River for gold mining. He made a three week prospecting trip there in November 1970 and took along six of his former workers.

Other opportunities for work at the Air Strip involved carrying loads for the Medical Ranger and the Agricultural Field Assistant.

*177 464 Periodically, they made field trips to the more remote settlements, including those in the headwaters of the Barima River. Also, more extensive employment was available with the Malaria Eradication Officer. He visits the area about every six months and employs about ten men for periods up to six weeks. The pay for carrying loads for [465] the Agricultural Field Assistant was about $4 a day. Those men employed by the officers of the Ministry of Health received about $6 a day.

In short, jobs were temporary and limited, similar to the early employment with transient porknockers. In contrast to the casual participation in the early opportunities, the limited jobs available at Baramita Air Strip constituted an unemployment problem. The Upper Barama River Caribs before and after thirty years of mining activities were operating on a very different economic basis. The commercial goods and a steady source of provisions provided by employment had come to be a desirable alternative to maintaining a farm in the bush. Nevertheless, due to the impermanence of employment, a Carib who becomes separated from a subsistence relationship to the rain forest is in a precarious position, as witnessed by the subsistence crisis experienced by the former miners and their families when In Time mine was closed. The remaining regional markets available at Baramita Air Strip were specifically intended to augment an agrarian subsistence among the Upper Barama River Caribs.

*177 657 *241 439 654 A large number of men were involved in subsidized agricultural development. In the summer of 1970, the first field was cut. About four acres of black-eyed peas were planted. From the harvest, 350

*177 657 241 439 654 pounds were received by the Guyana Marketing Corporation in Georgetown. From the sale of this harvest, $90 was returned to Baramita Air Strip and distributed among the ten or twelve men who had worked on the project. By the fall of 1970, a larger project subsidized by the Government was under way. From among the previous miners, ten were paid $4 a day to cut fields, plant, and later harvest crops. One man became discouraged before the harvest, and his field was turned over to another. One large field was cut alongside the air strip. Eight men were each apportioned a strip about seventy-five feet by 500 to 550 feet. Two other miners developed a separate field of about five acres which they worked together. The seeds were given by the Government and had to be returned from the harvest. The sale of the remainder of the crop to the Guyana Marketing Corporation was the farmer's profit. Peanuts and red beans were planted, and families were encouraged to help the men in the fields.

In addition to these specific projects, other Carib men were encouraged to grow cash crops with the government loan of seeds. At first, two men participated. They each planted peanuts. The combined March and April 1971 harvest from all of this subsidized farming amounted to 1416 pounds of peanuts, which sold for $481.44, and 374 pounds of red beans, which sold for $88.75. Also, in April and again in May of 1971, rations for cooperative farm projects were introduced at Baramita Air Strip. These rations included wheat flour, vegetable oil, and a mixture of cornmeal, soy bean flour, and powdered milk called bulgar wheat. This food[5] was distributed among about twenty-five men from the Air Strip as well as the satellite settlements where others were cutting fields for cash crops.

*177 657 262

where others were cutting fields for cash crops.

From time to time, the Agricultural Field Assistant arranged for bunches of bananas and plantains to be sent to the Guyana Marketing Corporation in Georgetown. Two Carib farmers were involved in this enterprise. From November through December, 1970, 607 pounds of bananas, 353 pounds of plantains, and thirty-five pounds of apple bananas were received by the Guyana Marketing Corporation from Baramita Air Strip. This returned a payment of $58.83.[6] Later, another man was encouraged to bring out a crop of limes from Baramita settlement for shipment to Guyana Marketing Corporation.

Still another new market opportunity involves handicrafts. Under the encouragement of the Welfare Officer for Amerindian Handicraft and Artifacts, the Project Officer looked into the local possibilities. He developed the manufacture of decorative bow and arrow sets. Smaller versions of the bows and arrows in use were designed. Both bows and arrows were about three feet long. One bow and two arrows were mounted on small wooden stands. Craftsmanship was put at a premium, and only the fancier washiba and leopard woods were used. A variety of arrow points for spearing fish and hunting game animals and birds no longer generally in use were revived. Men were paid between $3.00 and $5.00 per set, depending on the quality and the market in Georgetown. Having gathered all the materials, it generally took a man from two to three days of steady work to complete a set. Mostly only residents at the Air Strip made them, and any set that did not meet the Project Officer's standards was not accepted. At the end of the first year, several hundred of these sets had been

patron-client relationships in which Carib clients could also make limited demands on their employer. Generally, the degree to which these new opportunities were available to Caribs was reflected in a neglect of bush agriculture. Over time, this neglect proved to be precarious. These markets dissolved with the cessation of gold mining, leaving former miners and their families with no immediate relationship to a source of provisions. The new governmental offices, including that of Amerindian Captain, and officeholders do not have a record of sufficient permanence and assured access to stores of external resources to aggregate around them individuals in client positions. Although prominent among the new markets, cash crops have not replaced subsistence crops to any substantial degree. During the period of field work, no Carib was dependent for survival on the cash crops he grew. Rather, this activity was pursued in addition to subsistence farming and the income was used as pocket cash to make purchases among the commercial items at the trade store. In this manner, Caribs were not critically dependent on networks for the regional exchange of such refractory commodities as agricultural produce.

In short, regional markets have been impermanent. Even so, they have made available wages and external resources that have attracted the participation of the Carib population. Caribs can take part in these market opportunities and hedge against their insecurity only in so far as they maintain some level of bush agriculture. This is possible without restriction, as throughout the various human occupations in the Upper Barama River drainage basin, there is no

indication that the natural environment has been permanently degraded in any manner. However, some Caribs have neglected bush farms; specifically, those who regularly worked as miners at In Time. With the rupture of their source of provisions, the former miners and their families were faced with a subsistence crisis when In Time was closed. As an emergency measure, government subventions were introduced to sustain these people while they re-established bush farms. This was not a simple matter of waiting for the first crop. Although the manioc cultivated by the Upper Barama River Caribs is usually mature in nine months, it was commonly harvested as early as four months by the residents of Baramita Air Strip during 1970-71. Immature manioc obviously yields less calories than the mature crop, and a deficit in future crops was established. Also, a closer scouring of the natural environment for all sources of food, however minute, and, inevitably, hunger ensued among the Carib population at Baramita Air Strip.

In their remote rain forest environment, there have been no opportunities among the local Carib population to acquire resource banks which might include livestock, real estate, local enterprises such as shops or other mechanisms to divert, store, or otherwise manipulate the resources conducted through regional networks. Even agricultural fields, a primary local resource, are dependent on the labor extended to develop them and are eventually reclaimed by the forest. This underscores the lack of any other basis to hedge against the insecurity of external resources except to continually spend the labor to maintain farms in the bush. In the same manner, there is

2: Adams E-4,5 (1970-1971) 1973 SR9 Carib SR9
(1932-1971) Barama River

*177 438 • 24 [463] In the same manner, there is no basis for the differentiation of individuals in the Carib population on any sustained basis. Instead, the utility of external as well as local resources has remained in the immediacy of their availability to the local Carib population.

*177 438 177 421 Throughout the changes in the regional networks of exchange involving the Upper Barama River Carib population, some economic dimensions have remained unchanged. The nature of material property and its personal ownership are as Gillin describes them. A man owns his clothes, farm, house, hunting and fishing equipment and other tools, and the game he catches. A woman owns her clothes and tools for working on the farm and in the house. Nowadays, many commercial goods are among the property owned by men and women, and cash income *177 462 has been used to obtain them. Although men's activities have changed to include employment and other market endeavors, women have remained in their domestic domain. Even though some Carib men have been separated from a subsistence relationship to the rain forest, they have not been separated from the household context which provides a male-female partnership for returning to and maintaining a subsistence in the bush. This continuity is apparent in the organization among the Upper Barama River Caribs to exploit the different resource situations.

*177 476 624 [482] and as others moved to the Air Strip, the prominent Councillor was a pronounced source of agricultural assistance. At one time or another, he helped all households that moved to the Air Strip. To those who requested it, he would give a wolisha (a large basket for carrying loads on the back) of manioc tubers or processed cassava cakes. Clearly, the Councillor was not providing a major portion of subsistence for anyone outside his household. Yet, he was a source of [935] temporary relief during a time when farms were not yet productive and other sources of subsistence foods were scarce. Also, the Councillor made available manioc stalks necessary for planting new fields.

*177 622 624 [666] Partly as a consequence of these activities, the prominent Councillor was elected as Captain during the second local election held at the Air Strip in October 1971.

As he is a long time resident of the Air Strip and had expanded his already established agricultural fields, the Councillor was able to make allegiances among the population in this manner. During the [241] spring of 1971, he had 16.2 acres under cultivation compared to the incumbent Captain's farms, which amounted to 11.3 acres. This contrasts to 5.8 acres which was the average size of the cultivated fields of the remaining eighteen clearings at the Air Strip. However, this does not represent any sustained differential relationship to local resources. Agricultural fields are not exchanged. Rather, land holding is determined by the labor invested to develop it and remains a resource until it is reclaimed by the forest.[6]

*177 361 Over time, the size and stability of Carib settlements have changed. Increasingly, the population has centralized around sources of external resources.

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NOTES

[1]Gillin does not report the exact relationship between Miller and John Cook's wife.

[203] [2]Cassiri is fermented from cassava. Gillin reports two recipes (1936:61). Currently, only one is commonly used. Cassava meal is baked into dark brown cakes. Water with grated red potato for color is placed in the kanu - a hollow cedar log with carved handles at each end. The women with teeth then crumble the cakes with their hands into a mash in the kanu. All the while they chew mouthfuls of this mash and return it to the kanu. The contents of the kanu are then allowed to set for about three days before the drink is ripe. Singing and dancing and general conviviality take place during a cassiri spree until the supply of cassiri is exhausted. Attendance is by invitation, but strangers are usually welcomed.

[3]This contrasts to the nature of the work itself such as rubber collecting among the Mundurucu and fur trading among the Algonkian which resulted in nuclear family organization (Murphy and Steward 1956). Rubber trees and fur-bearing animals tend to occur in defined territories best exploited by single, mobile nuclear families.

[4]During the field work conducted in 1970-71, there occurred considerable innovation and experimentation with house types at the Air Strip and in the satellite settlements. In some cases, a wall was added on one or more sides of the traditional house structure, which is posts supporting a thatched roof. These walls were made of slats, boards, logs, woven mats or a variety of these materials. Also, some houses were built on tall poles which allowed a living floor to be constructed as much as one story above ground.

[5]Carib crafts have diminished in variety and skill since trade goods have been available. This is markedly apparent with regard to pottery. There are few potters and few pots. Commercial cookware of aluminum or enamel is used at the Air Strip and the satellite settlements for cooking and storage purposes.

[323] The diversity of clay pots reported by Gillin (1936:48-49) has been reduced to three types. A combination of shape and size elements distinguish the tuma etna, tukuwali, and tuluwa. The tuma etna or sauce pot is any small, free standing pot. These are between six and ten inches in dimension and include a variety of shapes. The tukuwali and tuluwa are not free standing. Rather, their base is small and somewhat pointed making it necessary for these pots to be supported by being partially sunk in the ground. They may be rimmed or rimless. The tuluwa has a broad mouth and is used for boiling sweet cassiri. The tukuwali has a constricted mouth and is primarily for storage. Sizes vary considerably. The largest are about three feet by three feet and the smallest are about eight inches in all dimensions.

[114] [240] [6]In his examination of the diagnostic features of slash-and-burn

cultivation, Conklin (1954:142) has also pointed out that the efficiency can only be measured by yield per unit of labor rather than per unit of area which is possible with some other types of agrarian systems.

[7]The government school at Baramita Air Strip maintains an enrollment of about 100 of which about fifty students are in daily attendance.

[8]Leve's (1966) and Riviere's (1966) arguments concerning the implications of marriage with sister's daughter in the structural integrity of a kinship system do not appear to apply in this case.

[9]From among the three terms for mother's brother, yaoko is exclusively used.

[10]Terminology from the male speaking system has been adopted for the new designation of father's sister's son's children.

[11]Carib kinship terms still reflect the acknowledgement of deference among immediate in-laws. Translated literally, a man calls his father-in-law, "my child's grandfather." He calls his mother-in-law, "my child's grandmother." Likewise, both men and women call their son-in-law, "my grandchild's father"; a daughter-in-law, "my grandchild's mother." As yet, no specific terms exist with which a woman designates a mother-in-law or father-in-law. Previously, she was not likely to meet these individuals.

2: Adams E-4,5 (1970-1971) 1973 SR9 Carib SR9
(1932-1971) Barama River

VI

CONCLUSIONS

In the previous chapters, attention has been given to the correlations over time of resources available for exploitation and the size and organization of a single population. The economic and reproductive adjustments of the Upper Barama River Caribs have been investigated. In their specific pathway from relative isolation in the rain forest into a national political economy, social organization and population size have been related to resource development. As this population has been centralized by common participation in networks of regional exchange, the household has emerged as the resource-sharing social unit. Ties of general reciprocity with a wider kinship group have tended to be dissolved. Another type of organization which has emerged to consolidate advantage in the regional economy has been client relationships with a middleman patron. In addition, external sources of food and clothing and medical care have tended to override relationships between population size and adaptation to local rain forest resources. An accelerating rate of population growth is currently evident among the Upper Barama River Caribs. In short, this population has evidenced changes in organization and increased population size under the conditions of its national integration.

Adapting to the rain forest, the Upper Barama River Carib population participated in the direct organism-to-organism cycling of

241 182 105 energy characteristic of this environment. Slash-and-burn cultivation is a replication of the rain forest, and in this manner, human groups do not extend their niche through agriculture but rather integrate food production with the extant biotic community (Geertz 1963:15-28; Meggers 1971:19-21). The productivity of cultivation, hunting, fishing, and gathering were the essential components of subsistence, and the Upper Barama River Caribs, limited in population size, shifted in location as a response to these endeavors. As a consequence of this semi-nomadic adaptation, the largest social unit was the settlement, within which the sharing of resources and the exchange of labor were patterned.

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*177 105 161 [464] [438] [657] In contrast, wage labor and other regional markets and modern medical technology have combined to expand the niche of the Upper Barama River Carib population. In turn, population size has expanded. At the time of Gillin's (1936) study in 1932-33, the Upper Barama River Caribs numbered about 200 and were located in dispersed settlements along the river corridor. There are now more than 550 Caribs nucleated around Baramita Air Strip. This increase in size has been achieved despite losses due to migration. The current rate of increase is about eight percent annually. Coupled with a low death rate, this is indicative of the potential for further increases among this population. Using population size as the coefficient of adaptation as proposed by Alland (1967, 1970), clearly a successful adjustment has been made to the new resources available over the short term generation-to-generation time span.

*177 43 In this context, any projections for either the future of the